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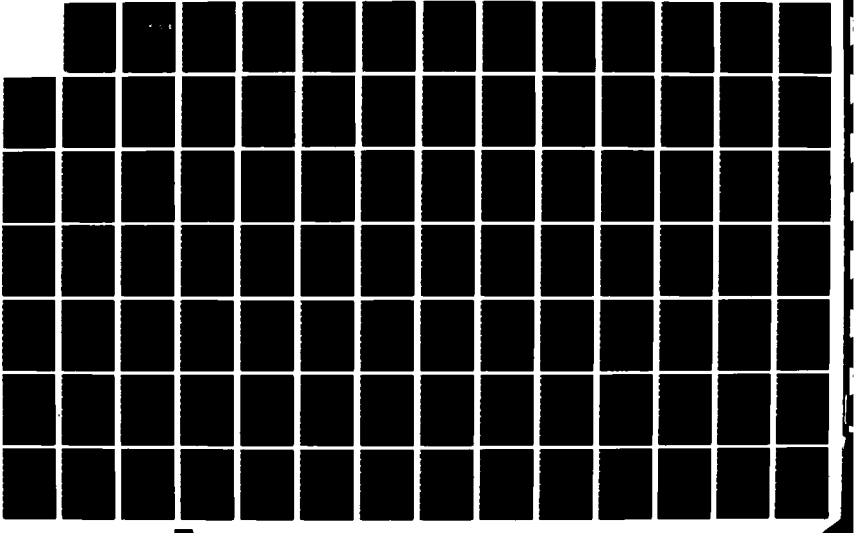

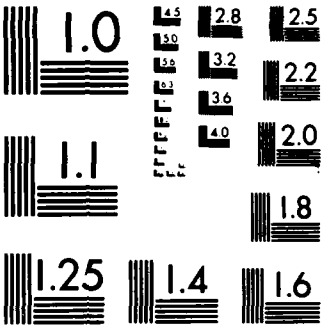

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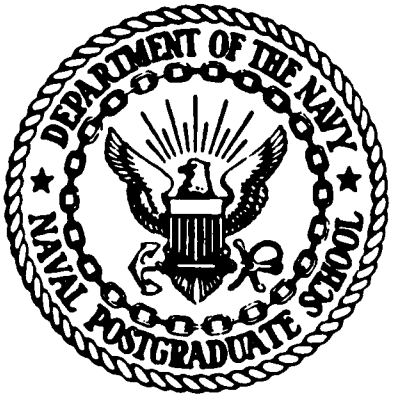

THESIS

AN EMPIRICAL ANALYSIS OF THE INFLUENCE OF CORPORATE MERGERS ON ORGANIZATIONAL SLACK

by

David L. Hingtgen

JUN 1987

Thesis Co-Advisors: Kenneth J. Euske
O. Douglas Moses

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An Empirical Analysis of the Influence of Corporate Mergers on Organizational Slack

by

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Lieutenant, United States Navy
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Submitted in partial fulfillment of the requirements for the degree of

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ABSTRACT

This thesis analyzes the effects of corporate mergers on organizational slack. It is hypothesized that organizational slack will be reduced in the acquiring firms following the merger. Further, it is hypothesized that the type of merger will affect the resultant change in slack. A multidimensional financial model is used to measure change in slack between pre- and post-merger time frames for 50 mergers that occurred in 1977 and 1978. Similar measures are calculated for a control group of 43 nonmerging firms. It is found that the merged firms undergo significantly greater reductions in slack than their nonmerging counterparts. Among the merged firms, horizontal mergers show the largest decrease in slack, followed by vertical mergers, and finally conglomerates.

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I. INTRODUCTION

A. BACKGROUND

Peak merger waves have historically raised the same questions, namely, what effects will the extensive merger activity have on the economy and society in general? The multitude of concerns include the threat of increasingly concentrated markets and the ensuing monopolies, the overwhelming political power obtained through megamergers, reduced employment, artificially high prices, and a lack of response to consumer demands.

In addition to public considerations, mergers impact significantly on several other groups, each with their own concerns and fears. Management within both the acquired and acquiring firms hope the merger will result in more efficient operations and greater profitability; conversely, they fear the potential job loss and organizational upheavals that may result. Shareholders of the acquiring firms hope to realize gains through their installation of perceived managerial superiority. Shareholders of the acquired firms look for increased stock prices and a chance to capitalize on the buyer's vast resources. Finally, the owners and top-level executives see the merger as an opportunity to gain prestige and power, reduce risk, and

take on even more challenging and exciting enterprises. (Benston, 1980)

Conflicts between the diverse factions involved in the merger game have resulted in government intervention in the form of antitrust legislation and more extensive industry scrutiny by the Securities and Exchange Commission (SEC). The Sherman Antitrust Act (1890), Clayton Act (1914), and Cellar-Kefauver Act (1950) are major constraints on merger activity; however, whether or not they are sufficient enough to protect the American public is a question for continued debate. One faction argues that there is little or no apparent advantage to mergers, either in terms of profitability or improved output and efficiency; consequently, they advocate banning all mergers (Mueller, 1980). Merger supporters counter that well-planned acquisitions result in economies of scale, synergistic effects, risk reduction, and production efficiencies, all of which would not be gained through ordinary expansion (Fisher & Lande, 1983).

In actuality, there has been little empirical support for the advantages of mergers. On the contrary, most studies have shown no improvement in post-merger profitability and some have even shown declines in overall performance (Steiner, 1975; Mueller, 1980). Although the research attempting to study merger effects is quite considerable (Short, 1967; Steiner, 1975; Davidson, 1985),

the concept of organizational slack has not been applied as a measure of merger performance. This measure of total operational capabilities may serve as an accurate indicator of merger effectiveness in that it is indicative of a firm's total resource utilization. The study of slack allows one to investigate changes in business activity that occur as a result of managerial, organizational, and economic considerations. The purpose of this study is to investigate the effects of merger activity on organizational slack.

This chapter is a general overview of the thesis. First, the objectives of the study and the research questions are discussed. Next, a brief explanation of organizational slack and the financial measure of slack proposed by Bourgeois and Singh are presented along with a summary of the research findings. Finally, a summary of each chapter is presented.

B. OBJECTIVES

This thesis looks at corporate mergers and acquisitions in terms of resource utilization. The study investigates merger activity on the basis of increased efficiencies within the merged firms. It is assumed that a decrease in organizational slack is associated with increased efficiency. Several concepts and definitions of organizational slack are discussed after which an empirical financial model is presented as a means to measure slack levels. Changes in slack indicated by this model are then

used to investigate whether or not merger behavior is related to the amount of slack resources in the firms involved. If improvements in slack levels can be shown after the mergers take place, then an argument could be made to defend the consolidations on economic grounds.

C. RESEARCH QUESTION

The primary research question posed by this thesis is: Does a relationship exist between corporate merger activity and the amount of organizational slack maintained in the acquiring and acquired firms? The central issue addressed is whether or not merger activity alters the amount of slack resources in the merged organizations. Variables such as the type of merger, industry classification, and firm size are analyzed in terms of the primary research question.

D. LITERATURE REVIEW AND METHODOLOGY

Since first introduced by March and Simon in 1958, the concept of organizational slack has undergone a variety of empirical applications. Several theories of slack are discussed within the thesis in order to familiarize the reader with the research in this area. Although the conceptualizations of slack are somewhat diverse, most researchers agree that slack consists of an excess of uncommitted organizational resources that result from performance above some expected level. Teece (1982) first suggested an explicit relationship between mergers and

organizational slack by stating that external growth may be efficiency-driven as a means to better utilize slack resources. He proposed that mergers should minimize the slack in the firms involved by more effectively channeling resources of the acquiring firm and providing better managerial control over the acquired firm.

The idea that slack levels may be affected by mergers is central to this study. Specifically, the Bourgeois and Singh (1983) financial model is used to measure organizational slack and to test the hypothesis that slack levels are reduced through mergers. This model looks at three components of slack--available, recoverable, and potential--and distinguishes between them on the basis of their ease of recovery. Financial data are used to calculate the slack measures, which are then summed to give total slack. The measures obtained are used to determine the change in slack from before the merger to after its completion.

A sample of mergers occurring during 1977 and 1978 is compared with a control group of nonmerging firms. The financial data for the sample firms are gathered from Moody's Industrial Manuals and annual 10-K reports. Measures of slack are then calculated for each firm over the period from four years prior to the merger to four years after. Changes in slack levels are determined by comparing pre-merger and post-merger quantities. These changes are

combined according to type of merger, industry group, and firm size in order to detect any trends.

E. SUMMARY OF FINDINGS

Changes in the subcategories of available, recoverable, and potential slack were calculated as well as the total change. Group means were determined on the basis of industry, firm size, and type of merger. The results generally support the hypothesis that slack decreases as a consequence of merger activity and that the amount of slack reduction is a function of merger type. The comparisons of merger type show the greatest slack reductions among the horizontal mergers, followed by vertical mergers, and finally conglomerates. In each case, the reductions are greater than for the nonmerging firms. T-tests showed significant differences between the total merging and nonmerging categories, while tests between merger types were not statistically significant.

Examining the change in slack levels for each industry group did not show significant differences from the total merger results. Firm size did not prove to be a significant variable in determining slack changes, possibly because all of the firms were among the largest in their respective industries and the size distinction was arbitrary. Although the means generally followed the directions hypothesized, the analyses of variance showed low levels of significance in all but the merging versus nonmerging comparisons. It is

suggested that the somewhat inconclusive results could stem from an inadequate model, limitations in experimental design, or the lack of an all-inclusive relationship between slack and mergers.

F. ORGANIZATION OF THE STUDY

Chapter II of this thesis reviews mergers and acquisitions in general. A discussion of the history of U.S. merger activity covers the significant trends and cycles from 1870 to the present. Next, the motives and effects of mergers are presented in terms of their economic, managerial, and social impact.

Chapter III is a comprehensive review of the literature dealing with organizational slack. The concept is first examined in light of empirical studies, after which a more concise definition is offered. Next, a relationship between slack and merger activity is suggested. Finally, various approaches to developing an operational measure of slack are presented.

Chapters IV and V provide an account of the analysis strategy used in this study. Chapter IV first presents the empirical hypothesis posed by the thesis. Next, the research design and data collection procedures are outlined. The specific operational measure of slack used to investigate the hypothesis is then given. Chapter V consists of an initial statistical analysis followed by a detailed interpretation of the results.

Chapter VI consists primarily of a summary of the findings and concluding remarks. The chapter closes with a brief discussion of areas for future research.

II. MERGERS AND ACQUISITIONS

A. INTRODUCTION

This chapter begins with a definition of corporate mergers and acquisitions and a brief description of the types of mergers. The discussion then turns to the origins of growth via merger, cycles and trends in merger activity, the various reasons for merger, and antitrust legislation.

A merger may be defined as a combination of two or more companies in which the resulting firm maintains the identity of the acquiring company; both common management and common ownership are the offshoots (Block & Hirt, 1984). In an acquisition, one company purchases the controlling interest in another, usually through a stock purchase, and then operates the acquired firm as a separate subsidiary or division (Short, 1967). Throughout the literature, and thus throughout this paper, the two terms are used interchangeably.

Three general classifications of mergers can be distinguished: horizontal, vertical, and conglomerate. Horizontal mergers take place when two or more businesses in identical industries combine. In a vertical merger, the acquired company is either a supplier of raw materials or parts, or a purchaser of the output (Mueller, 1980). The definition of conglomerate mergers is a bit more vague

(Mueller, 1980). They are sometimes defined as being those mergers that are neither horizontal nor vertical. More specifically, conglomerate mergers are business combinations of unrelated, diverse enterprises and are therefore not generally considered to have as drastic an impact on competition in a particular market. Conglomerate mergers may be further subdivided into product extensions, market extensions, or pure conglomerates depending on their underlying motivation and effects within the industry (Steiner, 1975). These distinctions will be discussed at length later in the chapter.

B. ORIGINS OF MERGER ACTIVITY: 1870-1895

Big business was somewhat slow to evolve in the early years of the United States. Although a booming domestic market encouraged manufacturing and agricultural combinations to achieve economies of scale and better marketing, firms were hesitant to engage in rapid expansion. The general public feared growth and regarded any expansion as a potential monopoly contrary to the public's welfare (Cochran, 1977).

By the early 1870's, largely as a result of the nationwide railroad and communications expansion, more and more manufacturing concerns came to realize that growth was vital. The railroads broke the previous transportation barriers and allowed widespread marketing while the telegraph and later, the telephone, allowed centralized

supervision of a number of widely scattered operations. As new technology increased rates of production, firms were unable to market and distribute goods as rapidly as they were produced. Somehow they had to integrate operations so the separate functions of marketing, purchasing, and production could all be handled under one roof. (Cochran, 1977)

Merger growth in all the major industries of the period followed the same general trend. Mergers initially began as trade associations or cartels consisting of many small businesses. Next, these consolidated into a single enterprise as a trust or holding company. After the legal entity was formed, centralized administration evolved as a fundamental control mechanism. Finally, the business integrated the production and distribution processes into one. (Chandler, 1977)

During the 1870s many trade associations were formed in the mechanical industries of making lumber, furniture, leather goods, and shoes; the refining and chemical industries; and the metal fabricating enterprises. The primary purpose of these associations was to control prices and production (Becker, 1971). In 1874 the Pennsylvania, Erie, and New York Central Railroads organized a formal cartel to better control rates and cooperatively oppose outside competition. However, industry and railroad associations both found such combinations difficult to

organize and maintain. Prices were often secretly cut by individual members, decisions could not be made regarding the internal management of individual firms, and no legal enforcement procedures controlled the entities. Because of the numerous complexities and disputes that consequently arose, many of the trade associations eventually broke up. (Chandler, 1977)

The trusts that evolved out of the surviving trade associations and cartels were systems whereby companies turned their stock over to a board of trustees who were authorized to act as a management board with the power to make all the operations and investment decisions for the participating companies (Hidy & Hidy, 1955). Major trusts in petroleum, cottonseed oil, sugar, whiskey, and lead processing grew rapidly and controlled their respective industries for several years, even after the constraints of the 1890 Sherman Antitrust Act (Chandler, 1977).

The first prominent merger in the United States came in the oil industry. In 1882 John D. Rockefeller created the Standard Oil Trust by persuading the stockholders of some forty oil companies to exchange their stock for the new Standard Oil certificates. The purpose of the trust was to increase profits first through concentration and centralization of production and control, and eventually by vertical expansion into marketing and drilling. By 1890 Standard Oil had become a completely integrated business

(Williamson & Daum, 1959). The success at Standard Oil soon brought similar trusts by major competitors, particularly the Pure Oil Company who was able to capitalize on the early structural advances of Standard and new pipeline technology to effectively compete in the marketplace (Chandler, 1977).

Outside of the oil industry other trusts were proving to be powerful competitive forces. Between 1884 and 1889 the American Cotton Oil Trust had consolidated production into seven refineries and established an extensive marketing and purchasing network that controlled 50 cotton gins and 52 cotton oil mills (Chandler, 1977). When William Thompson left Standard Oil to join the National Lead Trust in 1889, he took with him Standard's new procedures and installed new production consolidation methods, soon followed by consolidated purchasing, smelting, and marketing (Chandler, 1977). These innovations allowed National Lead to dominate the industry for decades. The American Cereal Company was formed in 1888 in an attempt to control the breakfast food market; today, as the Quaker Oats Company, it is still an industry leader.

Growth in these businesses shows the major trends of the period. In each case the resultant merger required a rebuilding as well as a reorganization of facilities. Internal financing was relied upon less; instead, firms had to look to capital markets for funds in the form of preferred or common stock. The already expanding ownership

of these large businesses was further extended by these new methods of financing.

The 1890s brought a surge of merger activity, primarily because of the restraints placed by the Sherman Antitrust Act. As a result of the outcry against trade associations and trusts, many firms incorporated themselves as holding companies. The Sherman Act did not specifically condemn such monopolistic reorganizations, nor did it define what constituted "undue restraint of trade," so the new holding companies were allowed to operate freely (Seager & Gulick, 1973). By thus replacing the trade associations with similarly structured holding companies, businesses could continue to control prices and production schedules. In 1889 New Jersey passed legislation explicitly to facilitate mergers and bring additional state revenue. It encouraged the formation of the heretofore questionable holding companies by endorsing their legality. (Cochran, 1977)

C. FIRST SIGNIFICANT MERGER MOVEMENT: 1898-1903

The merger activity of 1890-1893 was overshadowed by the number of mergers that occurred around the turn of the century. Between 1898 and 1903 more mergers took place in the United States than in any other nation. This new wave reflected the favorable conditions of domestic financial markets and the Supreme Court decisions regarding the Sherman Antitrust Act. In 1895 the Court upheld the legality of the American Sugar Refining Company as a holding

company exempt from Sherman Act jurisdiction, thus encouraging the continuation of the growth trend started a decade earlier (Chandler, 1977). Investors, investment bankers, and brokers had been looking for ways to market or obtain new market securities and industrial mergers seemed to be a promising source. As a result of such keen interest, by 1903 40 new industrial companies had grown to over $50 million in assets, all through merger.

Not only were the numbers of mergers growing, but the size of the participants was also increasing. The first megamerger, i.e., the combination of already large firms, came about in 1901 when United States Steel was formed by combining Carnegie Steel Corporation with several of its rivals (Davidson, 1985). The resultant $1 billion firm controlled almost 60% of the steel industry's output by year's end. The National Biscuit Company that formed through a three-firm merger in 1898 took advantage of new department and managerial consolidations and reorganizations to become a formidable competitor for the likes of Quaker Oats and Pillsbury.

Dominant forces such as improved technology, market controls, easy money markets, stock speculation, and more responsive management structures all led to bigger companies (Cochran, 1977). These motivating forces and the resultant mergers did not guarantee success, however, unless firms were able to utilize resources more efficiently and apply

the new technology of mass production to respond to the growing and diverse markets. In general, horizontal mergers were the most common and the successful ones met two conditions. First, they were able to consolidate production, centralize administration, and build their own purchasing and marketing operations. Second, they operated in industries where the technology and markets permitted the integration necessary to increase speed and lower the cost of materials during production and distribution (Chandler, 1977). This included industries such as food processing, complex machinery, chemicals, and primary metals. In any case, to ensure success, managerial hierarchies had to be created to guarantee the first condition mentioned above. The major mergers that survived this period, such as Quaker Oats, American Tobacco, DuPont, Otis Elevator, U.S. Steel, and International Harvester, all integrated along the same structural lines (Chandler, 1977).

D. EARLY TWENTIETH CENTURY: 1903-1940

During the first two decades of the 20th century there were few developments in merger trends. At the end of World War I, mergers were still concentrated in the integrated manufacturing and processing industries that first exercised such expansion in the 1880s (Chandler, 1977). The large industrial enterprise continued to prosper when it used capital-intensive, energy-consuming, continuous production technology to produce for mass markets. It catered to

numerous consumers who demanded high-volume flows of merchandise. The firm was able to maintain its success through integrated, coordinated administration that brought reduced costs and barriers to outside entry. (Chandler, 1977).

Following the merger wave that ended in 1903, the previous horizontal growth pattern gradually shifted to vertical integration as the primary means of external growth. One advantage of vertical merger was that it posed less of a threat of monopoly to the market. The Clayton Act of 1914 reinforced the Sherman Antitrust Act by placing additional constraints on activities that served to lessen competition. (Nelson, 1959) Many of these constraints were aimed directly at horizontal mergers. The Federal Trade Commission established by the Act concentrated its early efforts on collecting information on business practices and recommending prosecution where antitrust violations were suspected (Nelson, 1959). Another advantage of vertical merger was that such expansion enabled the business to obtain badly needed marketing and purchasing support for centralizing its manufacturing operations. Vertical expansion proved to be the least expensive and most efficient way to control both facets of product dissemination, thus establishing a more firm competitive position. (Steiner, 1975)

The following examples illustrate typical merger activity. In the food and tobacco industries where modern industrial enterprise first began, the early pioneers were still the leaders. By expanding product lines, marketing procedures, and processing capabilities, firms such as Armour Meats, Anheuser Busch, Quaker Oats, Heinz, and Coca-Cola all maintained large shares of the market. The oil industry was spurred by new and expanding automobile-related markets as well as new sources of crude oil. Although Standard Oil was forced to dismember in 1911, it continued to expand operations along with Gulf, Union, Shell, and Sun Oil Companies. In the glass, paper and chemical industries, where most consumers were other producers, expansion took place almost exclusively through merger. Companies such as DuPont and Union Carbide that had originally been formed by horizontal merger, now continued to dominate the market through vertical expansion. In the machinery making industry, mergers such as International Harvester, Allis-Chalmers, and General Electric were initiated to obtain complementary product lines using the same marketing and purchasing organizations. (Chandler, 1977)

Merger activity remained relatively constant until the second major rise in mergers occurred in the late 1920s. Hundreds of firms had gone public during the 1898-1903 merger wave in the hopes that ownership spread among widely scattered shareholders would serve as protection against

adverse public opinion or further legislation. Because of such offerings and extensive speculation by investors, companies had built large surpluses of earnings. Their stocks were typically being traded at prices much lower than the true value of the business, thus making them desirable targets for takeover. Additionally, the reduced capital investments that took place due to excess plant capacity caused business to resort to merger in an attempt to better utilize existing facilities and maintain production. The depression of 1920 to 1933 and the post-depression reconstruction period brought an abrupt end to the merger activity that had peaked between 1926 and 1928. (Chandler, 1977)

E. CURRENT MERGER ACTIVITY: 1940-PRESENT

It took until the mid-1940s for the economy to improve to the point where mergers were once again popular. World War II and the economic boom that followed brought production to capacity level along with renewed incentives for growth. Although somewhat concentrated, government contracting began to play a major role in maximizing plant utilization. Military procurement policies required relying on a relatively small number of defense contractors, primarily in aerospace, electronics, and chemicals but in these areas plants were operating at peak capacities (Cochran, 1970).

Government continued to keep a close watch over merger activity and in 1950 passed the Cellar-Kefauver Act to block any mergers that were against the public interest. This extension of the 1914 Clayton Act served to effectively bar many horizontal or vertical mergers that might otherwise have occurred in the years to follow (Benston, 1980). However, while intensifying the antitrust climate against such mergers, the act did not specifically prohibit conglomerate mergers which continued to rise as more businesses opted for this form of expansion. The real or perceived benefits from mergers had become enticing enough that if certain types of mergers became blocked (vertical and horizontal), others would arise. After 1950, conglomerates increased to constitute 71% of all mergers and the overall merger wave continued until the peak year of 1966 saw nine times as many acquisitions as took place in 1941 (Mueller, 1986).

Paralleling the escalation of the Vietnam War, the last half of the 1960s witnessed a dramatic increase in the number of conglomerate acquisitions, particularly a rise in the mergers of very large companies. Between 1961 and 1968 Gulf & Western completed 67 acquisitions, Textron, Inc. 50, Georgia-Pacific 45, Litton Industries 79, and Teledyne 125 (Steiner, 1975). A major distinguishing feature of the mergers that occurred during this period was the extent to

which they diversified the product mixes of the acquiring firms (Mueller, 1986).

One reason for such rampant conglomerate behavior was the lack of public or government outcry against such mergers. Through conglomerate merger, the opportunities for creating a monopoly were considered small because the conglomerate gained no real increase in the market share. Unlike horizontal, or to a lesser extent vertical mergers, conglomerates had no direct anticompetitive effects and thus were not a threatening form of growth (Steiner, 1975). Although the potential benefits in terms of economies of scale or efficiencies of operation are less obvious, they have remained a fairly unchallenged form of expansion.

The late 1970s brought another outbreak of merger activity. Runaway inflation had picked up speed by 1976 causing many companies to be undervalued on the stock market and thus prime targets for takeover. Acquisitions increased 23% that year over 1975 levels, another 8% in 1977, and almost 18% in 1978 (Mergers & Acquisitions, Spring 1978). Large deals ballooned as industry giants enjoyed record cash flows. Corporate executives were finding it less costly over the long term to acquire another company rather than to diversify or expand an existing operation. (Mergers & Acquisitions, Spring 1978)

Mergers took place in all areas of industry. In 1978 the second largest deal in merger history took place when

DuPont acquired Christiana Securities for $1.6 billion (Mergers & Acquisitions, Spring 1978). The most active merger activity continued to occur in heavy manufacturing and the oil and mining industries where leaders such as Atlantic Richfield, Gulf Oil, Champion International, and Johns-Manville continued to diversify and expand. Newspaper publishing companies became sought-after merger targets as the high costs of TV advertising forced many businesses to utilize newspapers. Food processors such as Beatrice Foods, Pepsi-Cola, and Coca-Cola led the merger wave. The so-called "merger mania" lasted well into the early 1980s when the ebb of business recession once again slowed activity to more moderate levels. (Mueller, 1986)

Following the brief recession of 1980 to 1983, the last few years have seen a gradual increase in mergers, particularly conglomerates. Whether or not this activity will ever lead to a dangerous level of industry concentration remains to be seen. (Mueller, 1986) To date it does not appear as though this conglomerate merger activity presents a threat; it is debatable whether they even constitute a particularly significant proportion of the total industrial growth that is still led by internal growth or de novo entry of small, developing enterprises.

F. REASONS FOR GROWTH VIA MERGER

Because of the widespread effects of mergers on the marketplace in general, and shareholders, management, and

employees in particular, merger activity typically gains considerable attention from all sectors. Several of these effects are presented following a discussion of the motivations for merger growth.

The motivations for mergers can be divided into two categories. The first category includes the internal operating effects of mergers. Major considerations in this area include a well-defined notion of profitability for both the buyer and seller, whether the stockholders or the managers are the decision makers, each party's valuation of the target's stock, outside synergies, and any external or internal conflicts of interest (Steiner, 1975). Synergistic effects, or additional benefits derived from the combination of two businesses, is central to many of these (Block & Hirt, 1984). Increased economies of scale through synergy are a major benefit of mergers and include the following (Benston, 1980):

- More efficient joint production taking advantage of scale economies and a greater range of products
- Integrated facilities to reduce transportation costs and supply uncertainty, as well as better coordination of facilities
- More efficient distribution, including sales, warehousing, shipping, and advertising
- Research and development savings
- Lower financing costs because of greater access to finance markets
- Lower administration costs.

Other synergies include the tax incentives of shifting resources from one industry to another without paying taxes and acquiring unutilized tax-loss carryovers, unused investment credit carryovers, and tax deferrals on credit sales (Steiner, 1975). Stock market speculation, the level of investors' information and beliefs, and other artificialities such as goodwill and subjective market feelings all create external synergies that can enhance expectations of future potential earnings (Steiner, 1975).

The second category of motivations for merger comprises the external market effects. The portfolio effect of combining two enterprises is one external financial motive whereby risk is reduced through diversification and the leveling effect on business cycles (Block & Hirt, 1984).

In addition to the portfolio effect, there may be additional motives specific to the shareholders of the target firm. These shareholders may wish to receive the acquiring company's stock because of its greater acceptability or perceived value (Block & Hirt, 1984). Additionally, gains in the value of their own stock at the time of a tender offer typically run 14-20%, reflecting a beneficial repricing of previously undervalued assets (Benston, 1980). These shareholders may feel that the merger is a good opportunity to take advantage of the buyer's resources or a new chance to reinvest underutilized capital (Steiner, 1975).

Stockholders of the acquiring firm may see potential gains through the installation of their own perceived superior managerial ability and resultant improvement in the target's profitability. Fast-paced growth through merger may be understood as the only profitable way to compete in the marketplace. Finally, as with the target shareholders, the acquiring owners may look at the merger as an opportunity to capitalize on the raw materials or specialized market of the new company. (Steiner, 1975)

To summarize, the list of postulated merger motivations is extensive and diverse depending on the predominant participants. Economies of scale, growth motivation, speculation, and increased market potential all enter into the merger decision to varying degrees. The following discussion addresses the effects of these mergers on the participants as well as the rest of society.

G. SOCIAL EFFECTS OF MERGERS: PROS AND CONS

One of the most controversial effects of mergers, at least from the government standpoint, deals with the impact on the consumer. Merger supporters present the argument that the resources saved by more efficient operations and better control lead to increased output and a higher standard of living. Further, they suggest that conglomerate mergers may actually increase competition by revitalizing an otherwise ailing firm so that it contributes more to that industry's output. (Benston, 1980) Opponents argue that

monopolistic effects are almost guaranteed regardless of merger type and that government legislation has not gone far enough to regulate mergers. Recent airfare increases as a result of numerous major airline mergers provide some support for the latter argument (Dahl & Brown, 1987).

Company employees and the surrounding community could either gain or lose through merger activity. In many cases, horizontal mergers consolidate operations and thus might eliminate certain job requirements. However, the opposite may occur with conglomerate mergers where greater investments in new plant and equipment result in company expansion. In this instance employees are provided with more opportunities for advancement, better training, greater job stability, and more prestige (Benston, 1980). Mueller (1977) disputes this advantage of mergers in that he argues a major cost of external expansion as the loss of more socially productive forms of growth. He states that "mergers compete directly with capital investment, research and development, and other investment type expenditures for cash flows and managerial decision-making capacities."

Merger effects on the general public primarily concern the increased concentration in market power that follows. A key fear of conglomerate mergers is that reciprocity, or the sales of products between business affiliates at significantly reduced prices, will fraudulently undermine competition (Steiner, 1975). Several types of reciprocity

can occur, many of them without merger, and thus far studies suggest that even where reciprocity takes place, its adverse effects on competition are nonexistent or at most insignificant (Steiner, 1975). The increased economic power of the merger giants is another fear that is apparently unwarranted. Because consumers have such a wide variety of products to choose from and a great ability to use substitutes, it is currently not possible for corporations to wield enough power to control the economy (Benston, 1980).

Specific benefits and costs can be associated with mergers as well as with any other form of business growth or internal activity. Steiner (1975) refers to mergers as "a mixed bag of motives and probable effects." In regulating merger activity, he recommends that guidelines should be established to distinguish between potentially adverse merger activity and whether overall effects will be large or small. Currently, the courts oppose acquisitions if competition is adversely effected by any one of the following factors: the elimination of a de novo entrant, the elimination of a firm threatening the market frontier, the entry via merger of a large producer rather than an available smaller one, or an entry that increases the barriers to other potential entrants (Steiner, 1975).

H. SUMMARY

This chapter covered the history of U.S. merger activity and the increasingly widespread role of mergers in all areas of business and industry. Government legislation to control mergers and the mixed public sentiment regarding mergers were also presented. The discussion of the internal and external motivations for mergers demonstrates some of the reasons why such growth strategies are selected despite public dissent and intensified government scrutiny. Increased economies of scale, tax incentives, better utilization of capital and management resources, increased market potential, and shareholder profitability all serve as major inducements to merger.

Having presented this general treatment of mergers and acquisitions, the following chapter looks more specifically at the concept of organizational slack and how mergers might impact upon the amount of slack resources available to a firm.

III. LITERATURE REVIEW AND THEORETICAL FRAMEWORK

A. INTRODUCTION

The previous chapter discussed the growing popularity of mergers and acquisitions as a means of growth. As merger activity becomes more widespread, the concern with the economic and social benefits and effects of mergers and acquisitions becomes more important.

This chapter introduces the concept of organizational slack and attempts to establish the significance of studying the relationship between mergers and their effect on the subsequent amount of organizational slack within the firms involved. Following a review of representative studies of organizational slack, suggested definitions are presented. Next, the basis for hypothesizing a relationship between slack and mergers is proposed. Finally, various methods of measuring organizational slack are listed along with the operational financial measure proposed by Bourgeois and Singh that will serve as the measurement instrument for this thesis.

B. REVIEW OF THE LITERATURE

Although the idea of reserve economic resources being available to firms has been alluded to for decades, it was March and Simon (1958) who introduced the concept of "organizational slack" in discussing business's ability to

react to economic and environmental fluctuations. Specifically, they suggested that slack is one factor affecting the goals of an organization and as such directly impacts on intergroup conflicts. When resources are plentiful, subordinate claims are not challenged and goal differentiation occurs; when resources become restricted, group interactions become more competitive, conflict increases, and diversification of goals is reduced (March & Simon, 1958).

Cyert and March (1963) refined the concept of organizational slack and further suggested that slack serves to stabilize an organization in two ways: 1) by absorbing excess resources it restricts the levels of aspiration during good times, and 2) by providing a pool of emergency resources, it allows aspirations to be maintained during bad times. In this manner, slack absorbs a substantial share of the potential variability in a firm's environment, thus dampening the wide fluctuations that might otherwise occur (Cyert & March, 1963). Similarly, slack can play a role in permitting the organization to effectively deal with uncertainty; a firm that uses slack to absorb the consequences of uncertainty does not have to rely as heavily upon other devices to control its environment (Cyert & March, 1963). Although advantageous to the firm, Cyert and March contend that management does not deliberately monitor

or create slack; rather, slack serves as an unintended consequence of the resource allocation process (Wolf, 1971).

Williamson (1963) takes a more managerial approach to the concept of organizational slack. He considers management to be the dominant group that controls the activities of the firm in order to achieve certain self-seeking objectives. As such, the managers operate principally to maximize a utility function consisting of salaries, staff, discretionary investment spending, and management slack absorbed as costs (Williamson, 1963). Economic conditions have a direct impact on slack. When the economy is favorable, managerial expenditures are allowed to absorb large quantities of uncommitted (slack) resources without exceeding their availability. As the economy becomes less favorable, staff levels, discretionary spending, and the amount of management slack expenditures are all reduced (Williamson, 1963). Excess resources will tend to disappear under adverse economic conditions and management becomes more constrained in its operations. Williamson implies that slack is not readily recovered during these periods of poor economic conditions because management is hesitant to yield to the overriding forces compelling them to satisfy their own personal needs (Williamson, 1963).

Wolf (1971) utilizes the concepts developed by Williamson and Cyert & March to look at methods of reducing

organizational inefficiency. He distinguishes two kinds of organizational slack--intentional and unintentional--and claims that management should continually strive to reduce both kinds of slack (Wolf, 1971). Unintentional slack is created because management lacks the information necessary to allocate resources at an optimal level, primarily because of inexperience or human decision-making limitations. Intentional slack is the deliberate assignment of resources and creation of slack in order to effectively deal with uncertainty. In either case, management is the primary determinant of the amount of organizational slack created. Through management, resources are either allowed to be expended on discretionary slack items or on more productive activities to increase profits (Wolf, 1971). As proof, Wolf suggests that better managed companies typically demonstrate better records of growth in operating profits as well as more constrained levels of organizational slack.

Onsi (1975) used various simulation models to investigate economic factors that affect slack in monopoly companies. He suggested that organization members create slack as a result of imperfections in the allocation of scarce resources and the bargaining process involved in attaining those resources. Onsi found that sales stability was a significant factor in slack build-up. The sales forces of companies operating under large sales fluctuations were under greater pressure and thus were forced to maintain

lower slack levels. Managerial behavior was another major factor. Managers demonstrating active slack behavior, i.e., those who actively sought the utilization of excess resources, showed higher levels of profitability over the long run than those practicing neutral, or conservative managerial behavior.

Litschert and Bonham (1978) developed a theoretical model which suggested that slack affects the relationship between an organization's strategy and structure by influencing the extent of the required fit between organizational structure and the environment. They determined that when the amount of slack is low, no excess resources are available to allow deviation in structural design. The kind of structure that occurs will be contingent on technology and the external environment. Because the necessary fit is tight, the organizational strategy pursued is determined strictly by the structure (Litschert & Bonham, 1978). When the amount of slack is high, more excess resources are available, thereby allowing more structural flexibility. In this case, the necessary fit between strategy and structure may be loose because economic sacrifices are less likely to occur. Now the organizational strategy will be more contingent on the attitudes and values of the dominant coalition (Litschert & Bonham, 1978).

In studying human resource policy decisions, Dimick and Murray (1978) suggest a close correlation between organization size and organizational slack. They found that firm size and the availability of slack both make various types of human resource policies more affordable. Extensive selection procedures, employee training programs, and more sophisticated performance appraisal methods were observed both in large organizations and in those with more slack (Dimick & Murray, 1978).

Hage (1980) later disputed the findings of both Litschert & Bonham and Dimick & Murray stating that sheer size and the availability of organizational slack do not necessarily imply strategic innovations. Unless a firm has adequate managerial know-how to be able to utilize slack effectively, advancements in research and development, long-range planning, and new technologies won't be realized. Where such managerial expertise exists, as with IBM, DuPont, and Kodak, underutilized slack is effectively employed to develop and exploit new technologies and consequently dominate the marketplace within each highly specialized field (Hage, 1980).

In a 1981 study, Bourgeois alluded to two opposing views of how slack promotes political activity within the firm. On one hand, Cyert and March (1963) stated that slack reduces political activity because the surplus of resources eliminates the need to compete during the allocation

process. Conversely, Astley (1978) suggested that slack promotes political activity because as new slack materializes, it becomes available for use and thus will be actively sought by competitive members. (Bourgeois, 1981)

Bourgeois and Singh (1982) tested several hypotheses relating slack to strategic and political behavior among management teams. Utilizing an empirical measure of organizational slack comprised of several financial indicators, they found that three separate dimensions of slack could be distinguished. Recoverable slack, or those resources already absorbed into the organization as excess costs, served to reduce political behavior. Potential slack consisting of the firm's capacity to generate future extra resources showed the opposite effect of increasing political behavior by promoting goal disagreement and managerial conflict. The last type, available slack, consisted of liquid resources not yet assimilated into the design of the firm. These available resources had no appreciable effect on behavior, possibly because they were already committed to meeting short term obligations.

In one of the most comprehensive studies of organizational slack to date, Singh (1983) proposed and tested several hypotheses relating performance, slack, and risk taking in strategic managerial decision making. To study these relationships, he suggested a two-component concept of organizational slack. Absorbed, or recoverable

slack, consisted of those resources that are already incorporated into the operations of the organization in the form of excess costs. Unabsorbed slack consists of readily available resources in excess of those currently obligated to operations. This distinction was necessary to explain the different effects of the two types of slack on performance.

Following the theory of Cyert and March, Singh tested the hypothesis that organizational slack increases with good performance and decreases with poor performance. He further suggested that organizational slack should have a positive effect on risk taking in strategic decisions. Singh found that better performance does in fact lead to greater absorbed and unabsorbed slack. However, although greater absorbed slack leads to increased risk taking, greater unabsorbed slack apparently does not. He therefore concluded that better performance leads only to higher levels of absorbed slack, which in turn allows for additional risk taking. On the other hand, unabsorbed slack has no effect on risk taking, possibly because uncommitted resources do not play the same buffering role when they are "outside the workflow of the organization" as do absorbed resources that are an integral part of organizational activities.

Singh (1983) also used the distinction between two types of slack to look at the hypothesis that organizational slack

has a positive effect on decentralization, which in turn should have a positive effect on risk taking. Although he found that performance and decentralization were directly related, his prediction that absorbed and unabsorbed slack should increase decentralization of decision-making was not supported. He assumed that controls would become tight in organizations with limited slack, thereby reducing decentralization, but his negative result didn't support the hypothesis. Despite the somewhat conflicting results and sampling limitations of his study, Singh's research showed some of the positive consequences of slack in organizations. In particular, absorbed slack encouraged increased risk taking and thus better performance by allowing the possibility of failure without destructive consequences.

In a more recent study, Antle and Eppen (1985) studied organizational slack and capital rationing in capital budgeting situations. They distinguished between the priorities of the owners and those of the managers regarding the optimal levels of slack in a firm. The owner's goal is simply to maximize the expected present value of the firm's investment. On the other hand, management's goal is to maximize organizational slack, which Antle and Eppen define as the difference between the budget allocation and the actual amount that the firm needs to invest to achieve its desired rate of return. Management's desire for slack comes from two major considerations: the uncertainty of specific

capital intensive ventures, and the desire to include all related, but not essential, expenditures such as travel and training in the budgeting process (Antle & Eppen, 1985). Thus, the authors address the managerial abuse of organizational slack as something that the firm's owners must scrutinize.

Poynter and White (1985) looked at the management of organizational slack in 36 foreign subsidiaries of major multinational enterprises. They defined slack in terms of the human resources in excess of the current needs of the enterprise and stated that such slack was particularly important in these firms because it was directly related to their ability to innovate and generate new strategies. Although slack could be efficiently used to address operational problems or to take advantage of opportunities outside the realm of the existing business, the two issues of the amount and kind of slack available were examined in order to determine causes of unnecessary slack and the particular slack resources most instrumental in devising future managerial strategies (Poynter & White, 1985). Unnecessary slack could easily come about after a new product line was introduced and subsequent requirements to maintain skill levels declined. Unless effectively used to exploit new opportunities, such unused resources would eventually reduce return on investment. Although the prospects for growth and renewal from slack human resources

might be desired in independent firms, Poynter and White did not consider them advantageous to subsidiaries. Even though slack could not be reduced completely, it was necessary to align both the amount and kind of existing slack with the organizational strategy suggested by environmental and internal factors (Poynter & White, 1985).

Gershenberg (1986) showed that by measuring the amount of slack in labor, capital, and management inputs, one may find that internal growth and development are possible without acquiring additional resources. By studying the large amounts of slack available to several Kenyan manufacturing firms, he found that better utilization of already existing resources could lead to increased productivity without expansion. Gershenberg (1986) suggested that one solution to excessive slack would be to establish new noncompeting firms; only such complementary enterprises would reduce the overall amount of slack resources within the economy.

The previous studies address several aspects of slack but the majority of them treat the concept in terms of managerial behavior and the effect of slack resources on organizational decision making. Table 1 summarizes the principal theories of slack.

In most cases a certain amount of slack is considered desirable as a stabilizing mechanism to absorb excess resources in prosperous times and provide emergency reserves

TABLE 1

THEORIES OF ORGANIZATIONAL SLACK

Author(s)	Theory
March & Simon (1958)	Slack affects goals, impacts on inter-group conflicts. Interactions become more competitive as availability of slack resources is restricted.
Cyert & March (1963)	Slack stabilizes firms in two ways. During good times excess resources are absorbed, thereby restricting levels of aspiration. In bad times, slack provides a pool of emergency resources.
Williamson (1963)	Managerial approach. Economic conditions impact on slack levels and force management to gauge expenditures, discretionary spending, and staff levels accordingly.
Wolf (1971)	Identifies two types of slack--intentional and unintentional--both of which lead to inefficiencies. Management is tasked with reducing both.
Onsi (1975)	Members create slack as a result of imperfections in allocating and bargaining for scarce resources. Close correlation between slack, sales stability, and managerial behavior.
Litschert & Bonham (1978)	Slack treated as a moderating variable affecting interactive effects of firm structure and environment. Strategies are affected by slack levels.
Dimick & Murray (1978)	Suggest close correlation between slack and firm size. Extent of human resource policies are determined by the amount of slack.
Hage (1980)	Managerial competence determines effective utilization of slack resources. Size alone is not a factor.

TABLE 1 (CONTINUED)

Author(s)	Theory
Bourgeois (1981)	Conflicting theories of behavior elicited by slack. Political activity may be reduced by slack as more resources are available to all managers; or, political activity may be increased as managers struggle to obtain more than their fair share.
Bourgeois & Singh (1982)	Distinguished three types of slack--available, recoverable, and potential--to study the ease-of-recovery dimension of slack on political behavior and strategic decision making.
Singh (1983)	Distinguished between absorbed and unabsorbed slack. Higher firm performance leads to greater amounts of both. However, only higher levels of absorbed slack lead to greater risk taking.

during bad times. Those material, managerial, and capital resources not currently used to attain organizational goals and objectives manifest themselves in a variety of ways. One of the most obvious is through management action; slack can be effectively utilized to promote research and development, enhance long-range planning efforts, and contribute to expansion, but only if management is competent enough to exploit these resources fully. Slack can influence political activity in the firm, depending on the availability of various components of slack which in turn have differing effects on political strategies. Slack was also found to be related to levels of performance and risk taking, further substantiating the relationship between

slack and managerial actions. The studies conflict on whether or not slack depends on the size of the organization. Proponents argued that sheer size allowed for more widespread human resource policies; opponents countered that slack in itself will not lead to innovation unless management is able to properly direct the use of slack resources. In spite of various and often opposing views of slack, the concept is associated with a wide range of organizational strategies and behaviors.

C. DEFINITION OF ORGANIZATIONAL SLACK

The previous studies of organizational slack suggest varying concepts of what constitutes slack. March and Simon (1958) were the first to define slack as the difference between the resources available to the organization and the total requirements of the members of the organizational coalition. Expanding on this idea, Cyert and March (1963) defined slack as the total supply of uncommitted resources, including those "funnelled into the satisfaction of individual and subgroup objectives" (p. 98). Examples of slack are wages greater than those needed to keep labor, excess dividends paid to stockholders, incentives paid to executives, and subunit growth beyond the rate of relative contribution (Cyert & March, 1963). Litschert and Bonham (1978) later used this definition to suggest that slack is the increase from a comparable organizational norm reflected

in such measures as return on equity, net sales, return on total assets, and gross profit as a percent of sales.

Child (1972, p. 11) defined slack as "the margin or surplus which permits an organization's dominant coalition to adopt structural arrangements which accord with their own preferences, even at some extra administrative cost."

Dimick and Murray (1978) stated that organizational slack consists of resources that an organization acquired over time and which are not committed to specific expenditures. Rather, they are reserves that could be used in whatever manner the firm desires.

Bourgeois (1981) offers perhaps the most succinct definition when he paraphrases the work of March and Simon as follows:

> Organizational slack is that cushion of actual or potential resources which allows an organization to adapt successfully to internal pressures for adjustment or to external pressures for change in policy, as well as to initiate changes in strategy with respect to the external environment. (p. 30)

Bourgeois (1981) suggests that these slack resources serve several vital functions to the organization. First, in the form of higher wages or executive incentives, they are an inducement for organizational members to stay with the firm. Second, as a resource for conflict resolution, slack allows the opportunity for exercising choice to be distributed evenly to all participants in the organization. Third, slack serves as a buffering mechanism in the workflow process. Various environmental uncertainty problems are

absorbed or reduced through the availability of slack resources; the need to coordinate subunit activities tightly is not as vital to maintaining smooth inter-departmental production schedules when adequate slack resources exist. Fourth, slack facilitates creative behavior. As more slack is generated, the organization can afford to experiment with new strategies such as introducing new products or entering new markets. Slack also permits more acceptable satisficing behavior by reducing the amount of selection criteria by which an alternative is considered feasible. (Bourgeois, 1981)

Despite minor disagreements as to what constitutes organizational slack, most researchers agree that it is an excess of uncommitted resources that result from performance above some anticipated level (Singh, 1983). Exactly how slack is defined is a function of the research measurement tool used and a wide range of subjective and objective measures have been suggested. The measurement difficulties associated with slack are discussed in the last section of this chapter.

D. RELATIONSHIP BETWEEN ORGANIZATIONAL SLACK AND MERGERS

Dimick and Murray (1978) concluded that organizational slack generally increases with firm size. Wolf's (1971) earlier finding that the size of a firm does not necessarily influence its slack levels runs contrary to these results and suggests that the particular behavior that regulates

slack may vary depending on the firm's management philosophy. Kwoka and Warren-Boulton (1986) suggest that firm size must be accounted for in comparing any aspect of efficiency. The greater economies of scale commensurate with larger firms may well lead to greater profitability, faster growth, or lower unit costs while slack levels still remain relatively high. Whether or not increased size comes about through internal growth or merger is not addressed in any of these studies. However, Wolf (1971) suggests differing outcomes through external expansion (e.g., merger or consolidation) stating that the likelihood of reducing slack (considered beneficial) is better if changes in top management occur from outside the organization.

In 1982, Teece offered a more explicit relationship between growth and its effect on organizational slack. He states that diversification may be efficiency-driven as a means to better utilize slack resources. The profit-motivated firm is faced with three possible choices for reinvesting or employing slack resources: 1) the firm can sell the services of its unused assets to other firms in other markets, 2) it can diversify into other markets through merger or internal (de novo) expansion, or 3) if the slack is in cash, it could return a portion to shareholders as dividends or stock repurchases. (Teece, 1982)

Teece (1982) suggests that when the transaction costs of options 1) and 3) become excessive, the firm will diversify. In doing so, de novo expansion is preferred if slack resources appear gradually over time. In this manner, expansion can be incrementally tailored to the economic environment. However, if slack resources occur suddenly, e.g., through a major technological advancement or an adverse change in demand, then merger is preferred. Whether horizontal or conglomerate, it is expected that mergers and acquisitions will minimize organizational slack in both firms involved by channeling the excess resources of the acquiring firm into productive use while also providing greater managerial control over the acquired firm. (Teece, 1982)

A further distinction must be made on the basis of the type of merger. For this study, mergers are categorized as either horizontal, vertical, or conglomerate. Fisher and Lande (1983) state that the type of merger will lead to varying efficiencies in the resultant operation. They contend that horizontal mergers should cause the greatest efficiencies, or reduced levels of slack, because of the synergistic savings from combining research and development, marketing, management, distribution, and production compatibilities, and the resultant increase in market domination. Based on this argument, vertical mergers would show less improvement and the amount of slack in

conglomerates would be changed to an even lesser degree. In fact, more slack may even be generated because of reduced transaction costs, particularly in vertical mergers. Arnold (1984) questions the ease of integration and realization of synergies regardless of the merger type. He states that particularly in manufacturing, even companies with very similar product lines may not see as great an improvement as expected because of slight tooling variances, incompatible production methods, or a disregard for personnel considerations. Literature suggests that the effects of different types of mergers are not generally agreed upon and each type must be analyzed separately.

Based on the above arguments, it is expected that horizontal mergers will show the greatest reduction in slack. Both vertical and conglomerate mergers should show lesser reductions. While both vertical and conglomerate mergers may have smaller overall synergistic savings, they might also see more slack generated as a result of reduced transaction costs so that the combined effects will be offset.

E. DEVELOPING AN OPERATIONAL MEASURE OF ORGANIZATIONAL SLACK

Having discussed some of the definitions and functions of organizational slack, it becomes evident that it is a difficult concept to operationalize. Although researchers generally agree that slack consists of excess resources over

and above those required for the firm's operations, there is no operational definition of the optimal amount of slack. Additionally, it is not clear that optimal levels are the same from one industry to the next. Depending on inconsistencies in business cycles, fluctuations in the market, relative scarcity of raw materials, and countless other economic factors, industries may require varying amounts of slack. Deciding how much slack constitutes the industry norm, quantitatively measuring that slack, and then measuring and comparing the amount of slack within the individual firms in that industry are not insignificant matters.

Several methods of measuring organizational slack have been proposed and tested in the literature. One procedure that reappears from time to time is the use of questionnaires. Besides relying on a more objective measure based on return on investment, Odell (1972) used a questionnaire to derive a perceptual measure of slack based on perceived differences between a firm's inducements and contributions. Later, Kmetz (1980) used three sets of questionnaires to measure slack resources, slack performance, and production smoothing. Gershenberg (1986) estimated the amounts of labor, capital, and management slack by using surveys which asked whether the use of resources would change if the current level of demand were increased by some percent. If not, that maximum percentage level was considered to be the

amount of available slack. These survey procedures all rely on organizational members to supply the data; consequently, their subjectivity and susceptibility to misinterpretation cannot be avoided. A consistent, quantitative measure of slack that can be used for comparative empirical examination cannot be derived from these qualitative methods.

Dimick and Murray (1978) used a more quantitative measure by determining average net profit over a five-year period, controlled for organizational size. Wolf (1971) used selling, general, and administrative expenses as a measure of slack on the basis of the intensive scrutiny that these expenditures come under when resources become scarce. He then used operating profit as a measure of available resources and studied the relationship between the two. Although these measures are more objective and suitable to analysis, they are both somewhat narrowly-defined and do not adequately consider all the aspects of organizational slack.

Bourgeois (1981) introduced a more extensive use of public financial records as a means to detect and differentiate various levels of slack. Because financial data have little meaning in isolation, he emphasized the need to look at changes in organizational slack over time, not just absolute amounts. Comparative analysis was advocated which looked at trends in the data.

Bourgeois distinguished between two sources of slack: internal and external. Internal slack was created by

certain managerial actions and was reflected in changes in retained earnings (RE), dividend payments (DP), general and administrative expenses (G&A), working capital as a percentage of sales (WC/S), and the debt/equity ratio (D/E). External slack consisted of those resources made available by the environment. This slack was identified by changes in credit rating (CR), the difference between interest rate paid on short-term loans and the prime lending rate (I/P), and the price-earnings ratio (P/E). His model is summarized below:

change in slack

= f(change in RE, DP, G&A, WC/S, D/E, CR, I/P, P/E)

Increases in RE, G&A, WC/S, CR, and P/E would all indicate increases in organizational slack, while decreases in DP, D/E, and I/P would similarly show increases. (Bourgeois, 1981)

Bourgeois and Singh (1983) developed this framework further by identifying a three-component model of slack that distinguished between available, recoverable, and potential slack. Available slack consists of those resources not yet assimilated into the design of the organization. They are measured by increases in (net profit - dividends)/sales and (cash + securities - current liabilities)/sales, and decreases in dividends/net worth. Recoverable slack consists of those resources already absorbed that could

still be recovered. These are measured by increases in accounts receivable/sales, inventory/sales, and (general and administrative expenses)/sales. Potential slack is the capacity to generate additional resources from the environment. These appear as reductions in long-term debt/net worth and increases in the price/earnings ratio. Each of these measures is then combined algebraically within each of the three categories and an overall measure of slack is derived by summing the three. (Bourgeois & Singh, 1982) This more comprehensive measure of organizational slack is the method utilized to investigate the relationship proposed in this thesis.

F. SUMMARY

Several studies have been presented in an attempt to conceptualize organizational slack as a resource that plays a very definite role in affecting a firm's behavior. Slack resources can serve to stabilize an organization by regulating output and allowing for more structural flexibility in maintaining a proper fit between the firm and its environment. It impinges directly on managerial decisions and affects the political climate of an organization. Slack is most generally defined as an excess of resources that allows an organization to adapt to external pressures and to initiate changes in strategy with respect to those external considerations.

The relationship between slack and mergers was examined. It was hypothesized that firms engaging in mergers should experience a more efficient utilization of resources and consequently a reduction in slack. It was further hypothesized that firms engaging in mergers should experience a more efficient utilization of resources and consequently a reduction in slack. It was further hypothesized that the degree of slack reduction would depend on the merger type.

Subjective and objective measures of organizational slack were discussed along with the reasons for rejecting questionnaires and less comprehensive quantitative measures as biased and incomplete. Instead, the three-component model of slack suggested by Bourgeois and Singh is recommended. This model utilizes public financial data to derive a precise and comprehensive quantitative measure of slack.

The next chapter addresses the research design used to investigate the relationship between slack and mergers, and discusses the Bourgeois and Singh measurement model more thoroughly. Data collection and analysis methods are also presented.

IV. METHODOLOGY AND DATA

A. INTRODUCTION

The previous two chapters dealt with corporate merger activity and incentives for business to engage in such activity. The concept of organizational slack was presented along with the suggested relationship between slack and merger activity.

This chapter begins by stating the empirical hypotheses which form the basis for this study. Next, the research method is presented in terms of the setting, experimental samples, and data collection procedures. Finally, the Bourgeois and Singh model of organizational slack as applied in this thesis is explained in more detail.

B. EMPIRICAL HYPOTHESES

In the past, peak merger waves have raised the same issues: what effects will the extensive merger activity have on society, and will the economy as its exists today be swallowed up by a handful of corporate giants? Although historians such as Chandler (1977) suggest that corporate growth and diversification are often engaged in merely to put slack resources to work, society's primary concern has been to impose a multitude of antitrust limitations on merger activity. Legal restraints abound. (Benston, 1980) Even in relatively small acquisitions, scores of investment

bankers and specialized merger attorneys are required to resolve the antitrust implications and attempt to reassure the shareholders and the public that the merger is not a destructive activity. Indeed, the number and size of recent hostile takeovers and insider investment trading scandals have made the public even more skeptical of any positive benefits to be derived from mergers. (Davidson, 1985)

To date, studies of merger activity have shown little or no increase in post-acquisition profitability (Steiner, 1975; Davidson, 1985; Mueller, 1986). In spite of various motives for mergers, none of them seem to substantiate themselves to any degree in the merged firms. No published evidence has been found that measures enhanced managerial and organizational effectiveness in terms of optimizing slack. If it could be demonstrated that mergers and acquisitions reduce the amount of slack in these firms, then one could argue that a positive contribution to economic efficiency is the result. Rather than viewing mergers as monopolistic activities that threaten to take over business and industry, these mergers might be more readily accepted as contributors to increased productivity in the marketplace.

This thesis specifically examines the effect of corporate mergers and acquisitions on the amount of organizational slack contained in the acquiring firms after the merger. In the wake of research by Dimick and Murray

(1978) and Teece (1972), it is suggested that a reciprocal relationship exists between mergers and slack. That is, post-merger operations should demonstrate reduced levels of organizational slack within the parties to the merger. Specifically, this thesis proposes the following hypothesis:

H_1: Mergers result in reduced levels of organizational slack in the acquiring firm.

As mentioned in the previous chapter, Fisher and Lande (1983) suggest that the type of merger may lead to varying efficiencies in the resultant operation. Horizontal mergers would be expected to demonstrate the greatest slack reduction because of savings through combined research and development, marketing, management, and production. Vertical and conglomerate mergers would realize lesser degrees of savings because of less compatible production and managerial techniques and thus less integration. In this case a positive reduction would occur due to better access to such things as capital markets. This suggests the second hypothesis as follows:

H_2: Among merging firms, the type of merger affects the resultant change in slack. Horizontal mergers are expected to show the greatest reduction, followed by vertical mergers, and finally conglomerates.

C. RESEARCH METHODOLOGY

Two major considerations prevailed in designing this study. The first was data availability, or choosing a time frame that would yield a pool of mergers ample enough to provide for adequate statistical analysis. Choosing a

narrow time frame in which many mergers occurred would control for any economic or environmental fluctuations that may otherwise bias the data. The second constraint was imposed by the research question which required looking at organizational slack for several years before and after the merger took place.

The intensified merger activity of the late 1970s provided a data base that satisfied both of these requirements. In the five-year interval from 1973 to 1978 the number of annual mergers nearly doubled, with the major upturn beginning in 1976. The two-year period from 1977 to 1978 was chosen to provide the merger sample for three reasons. First, some 2,485 acquisitions occurred during this time frame providing a large initial sample size. Second, the data to analyze these firms had to be gathered for several years before and after the merger; financial data were readily available for that entire period. Third, the economy was relatively stable between 1976 and 1978, allowing treatment of the mergers as one group.

Broadly speaking, the methodological steps that comprise this empirical analysis are summarized as follows:

(a) Identification of a sample of firms engaged in mergers during 1977 and 1978.

(b) Categorization of sample firms by type of merger, industry, and firm size.

(c) Identification of a matched sample of nonmerging firms.

(d) Collection of financial data for all sample firms for the period from 1973 to 1982.

(e) Calculation of measures of organizational slack for the test period using the Bourgeois and Singh measurement model.

(f) Calculation of the change in slack for the sample firms between the pre- and post-merger periods.

(g) Summation of individual measures of change in slack to provide summary indicators of the aggregate change in slack for each firm.

(h) Statistical tests comparing the change in slack between merging and nonmerging firms.

(i) Statistical tests comparing the change in slack between horizontal, vertical, and conglomerate mergers.

(j) Statistical tests exploring the effects of industry and firm size on the change in slack.

Items (a) through (e) are discussed more fully in the remainder of the chapter. Items (f) through (j) are addressed in Chapter V.

D. SAMPLE SELECTION

This study looks at mergers of medium to large sized U.S. publicly held firms. The mergers were identified using the quarterly roster published in Mergers and Acquisitions. Each merger was initially screened on the basis of the relative size between acquired and acquiring firms. Only those mergers in which the size of the acquired company was at least 10% of the acquiring firm (as determined by the acquiring firm's total assets) were retained. Those mergers that did not meet this criterion were excluded under the assumption that the acquisition of a firm less than 10% of

the buyer's size would have negligible effects on the organizational slack or operating characteristics of the larger firm.

The 10% size criterion mentioned above reduced the sample size by approximately one-fourth, down to 1,680 mergers. Next, the cross-index of merging firms published annually in Mergers and Acquisitions was used to eliminate any firms that merged more than once between 1973 and 1982 and had been considered as part of the original sample. This was done so that the effects of the other mergers would not obscure any changes in the level of slack attributed to the mergers under investigation. This procedure reduced the merger sample to 198. Of these, 115 were privately owned and thus were not included. Finally, mergers within the banking and finance industries were deleted. The Bourgeois and Singh framework for measuring organizational slack used in this study is not applicable to such industries; therefore, these mergers were not used.

Of the remaining 69 firms, 50 of them fit well into six major industry groups as identified by their three-digit standard industrial classifications (SICs). Each of the other 19 firms was contained in a different industry. In order to focus on a limited number of industries for matching purposes, these 19 were discarded. The industry groups are listed in Table 2 below. Dun's Business Rankings was used to classify the mergers by SIC and also to identify

TABLE 2

DATA SAMPLE

Industry Group	SIC	Number of Mergers	Number of Non-Merging Control Firms
Retailing	115,118	13	12
Electrical	351,353	14	12
Chemicals	261,263	10	9
Petroleum	131,132	5	5
Food Products	202,203	4	4
Office Products	357	4	1

the pool of businesses from which to choose the control group.

The merging firms were then divided into three categories--large, medium, and small--on the basis of net sales of the acquiring firms prior to the merger. The size distinction is relative in that the firms considered are among the largest 25% of all U.S. corporations. Natural cutoffs were chosen that split the firms into three roughly equal groups. The merging firms were also classified according to merger type as either horizontal, vertical, or conglomerate as identified in Mergers and Acquisitions. Next, the control group of non-merging firms was selected to match the mergers both in terms of size and SIC. The final data base consists of 50 mergers and a control group of 43 firms that engaged in no mergers during the 1973 to 1982

time frame. Financial data for these 93 firms were then obtained either from Moody's Industrial Manuals or from the annual 10-K reports filed with the SEC.

E. OPERATIONAL MEASURE OF SLACK

The previous chapter discussed several measures of organizational slack. The one utilized in this study is the financial model offered by Bourgeois and Singh (1983). This model is derived from Bourgeois' earlier model which categorized slack as either internal or external. Internal slack is created by managerial actions and external slack becomes available through the environment, or factors external to the organization. In spite of this distinction, Bourgeois' model treats the components of slack as one entity in which he combines the values of several individual measures algebraically to elicit one value for slack. This amount is then intended to show only relative changes in slack and not to serve as an absolute quantity. Bourgeois stated that tracing changes in slack was a more valid approach than looking at absolute levels because of the importance of treating financial data on a comparative basis. Financial statistics typically have little meaning in isolation; rather, balance sheet and income statement data are more appropriately viewed in terms of trends instead of single "snapshots" of a firm's position at one point in time (Bourgeois, 1981).

Bourgeois and Singh (1983) later devised a multidimensional conceptualization of slack that accounted for some of the discrepancies found in Bourgeois' earlier model. In trying to operationalize the internal vs. external measure, they found that they were actually looking at more than one dimension. They regarded the revised financial measures as lying along a continuum representing the ease with which the particular slack resources could be recovered. For example, cash and marketable securities are readily available resources to the organization. On the other hand, accounts receivable and overhead items such as inventories and G&A expenses take more time and effort to reduce. The use of inventories as a measure of slack is taken from its consideration as a buffer mechanism proposed by Galbraith (1973). Inventories serve as a buffer against variances presented by environmental factors and their existence allows for smoother, more uninterrupted production processes. Raw materials and finished goods inventories serve as technical buffers basic to the firm's operations while work-in-process inventories represent interdepartmental buffers that allow for more flexibility between work centers. Finally, the capital-raising potential represented by changes in stock price is the most long-term source of slack available through external sources.

To distinguish between the ease of recovery of the slack resources, Bourgeois and Singh devised the three categories

of available, recoverable, and potential slack. Table 3 summarizes the variables used to measure slack within each category. The study is concerned with changes in slack from pre- to post-merger periods; hence differences in these variables over time are calculated. The signs indicate whether slack increases (+) or decreases (-) as the variable increases and in addition show how the measures were treated when summed into aggregate measures of the change in slack over time. Net sales is used as the denominator to control for changes in the overall level of organizational activity because short-term resources would be expected to change to support varying levels of output. An additional benefit of this control is that it allows a comparison of slack levels between firms of different sizes.

TABLE 3

MEASURES OF ORGANIZATIONAL SLACK

Category of Slack	Slack Measure	Sign
Available Slack	(Net Profit-Div)/Sales	+
	Dividends/Net Worth	-
	(Cash+Securities-Curr Liab)/Sales	+
Recoverable Slack	Accounts Receivable/Sales	+
	Inventory/Sales	+
	(Gen'l & Admin Expense)/Sales	+
Potential Slack	Long-term Debt/Net Worth	-
	Price/Earnings Ratio	+

F. SUMMARY

This chapter discussed the main hypotheses posed by this thesis. These are summarized below:

H_1: Mergers result in reduced levels of organizational slack in the acquiring firm.

H_2: Among merging firms, the type of merger affects the resultant change in slack. Horizontal mergers are expected to show the greatest reduction, followed by vertical mergers, and finally conglomerated.

This chapter also discussed the research design and sources of data used in this study. The multidimensional model of organizational slack using financial data to provide relative quantitative measures was presented. Table 3 summarizes the dimensions and the slack measures used.

The next chapter discusses the analysis of the data derived for organizational slack and the resultant research findings.

V. ANALYSIS AND APPRAISAL

A. OVERVIEW

This chapter analyzes and interprets the data described in the previous chapter. The raw financial data were used to calculate the measures of organizational slack as proposed by Bourgeois and Singh. First, a preliminary description of the measures is presented. Next, the statistical analyses are described. These consist of t-statistics and analysis of variance (ANOVA). Finally, a discussion of the findings and empirical results is presented in terms of the hypothesis that the amount of slack in merged firms is expected to decrease following the merger.

B. PRELIMINARY DATA ANALYSIS

Financial data were collected for the 50 acquiring companies and 43 control companies as detailed in the previous chapter. The data covered a nine-year period from four years prior to the merger to four years after it occurred. From these raw data, each of the eight slack measures described in Table 3 was calculated for each sample firm. This was done for four separate years: two and four years prior to the merger and two and four years after the merger. Next, average measures of pre-merger slack were calculated by averaging the measures from two and four years prior to the merger. Analogous average post-merger slack

measures were calculated for two and four years after the merger. Similar measures were calculated for the same time periods for the nonmerging firms. Finally, the percent changes between the pre- and post-merger levels were calculated for the individual measures. This was done by subtracting the average of the pre-merger quantities from the average of the post-merger quantities and dividing by the average of the pre-merger quantities. Since small denominators can lead to extreme values for percent change variables, measures of slack change greater than 200% or less than -200% were truncated to + or - 200%. This was done to reduce the effect of outliers on the statistical tests. (Only 1.8% of the tests, or 11 firms, were affected by this procedure.)

The individual measures of change were combined algebraically by category into summary indicators of available, recoverable, and potential slack using the signs indicated in Table 3. Bourgeois and Singh (1983) submit that addition into summary measures is appropriate because the individual measures added are all percent change measures and hence have the same scale and meaning. These three summary indicators were then summed to obtain measures of total change in slack. Tables 7 and 8 of the Appendix summarize the changes in slack for each sample firm. The table abbreviations are defined as follows:

CHGAV	Percent Change in Available Slack
CHGREC	Percent Change in Recoverable Slack
CHGPOT	Percent Change in Potential Slack
CHGTOT	Percent Change in Total Slack

For display purposes, the individual firm results were classified according to merger type and merging versus nonmerging firms. Table 4 lists the means, standard deviations, minimum, and maximum values for the slack change indicators for each of the subgroups.

The table shows that the total merging firms have relatively large decreases in total slack (-99.3%) while the nonmerging firms show a total increase (+14.6%). Similarly, each subcategory of slack shows greater reductions for the merged firms. The widest difference occurs in the change in potential slack where the merged firms show a decrease in CHGPOT of 25.6% while the nonmerging firms show an increase of 47.1%. In each instance, the relative difference in slack supports the first hypothesis that a greater reduction in slack occurs as a result of merger.

The second hypothesis, which states that horizontal mergers should exhibit the greatest slack reduction among the merged firms, is also supported by the results in Table 4. Horizontal mergers show the largest reduction in total slack (-134%), followed by vertical mergers (-81.9%) and finally conglomerates (-32.1%). The three summary indicators show similar results. With the exception of CHGREC between the horizontal and vertical mergers, each

TABLE 4

PRIMARY SLACK STATISTICS FOR MERGER TYPE

Merger Category	Mean	Std Dev	Min	Max
Horizontal:				
CHGAV	-105	135	-531	126
CHGREC	12.1	86.9	-132	221
CHGPOT	- 42.1	135	-255	226
CHGTOT	-134	163	-436	146
Vertical:				
CHGAV	- 35.2	164	-391	246
CHGREC	- 10.2	64.7	-130	111
CHGPOT	- 27.5	129	-267	225
CHGTOT	- 81.9	217	-608	422
Conglomerate:				
CHGAV	- 27.2	79.5	-133	45.6
CHGREC	19.2	120	-112	239
CHGPOT	28.9	227	-241	500
CHGTOT	- 32.1	164	-315	141
Total Merging:				
CHGAV	- 69.9	142	-531	246
CHGREC	4.9	84.8	-132	239
CHGPOT	- 25.6	14.7	-267	500
CHGTOT	- 99.3	184	- 60.8	422
Non-Merging:				
CHGAV	- 40.4	127	-341	265
CHGREC	17.5	49.1	- 54.8	200
CHGPOT	47.1	138	-220	363
CHGTOT	14.6	186	-361	630

subcategory shows the greatest decrease in slack for horizontal mergers. Vertical mergers show decreases for all three subcategories, although these are less pronounced than for the horizontal mergers. Conglomerates show a decrease

only in CHGAV (-27.2%), with slight increases in both CHGREC (+19.2%) and CHGPOT (+28.9%).

C. STATISTICAL ANALYSIS FOR DIFFERENCES BETWEEN GROUP MEANS

The findings presented in Table 4 are suggestive but not conclusive. While differences in slack were found to be consistent with the hypotheses, those differences are not necessarily significant. To examine the issue further, t-tests for significant differences in change in slack between the subgroups were conducted. An alpha level of .10 was used as a cutoff for significance. Table 5 reports the T values and significance levels for tests of difference between merging and nonmerging firms (column 1) as well as between other subgroups of sample firms (columns 2-7).

Several results are apparent from Table 5. The overall total slack reduction is significantly greater for the merging firms than for the nonmergers (CHGTOT = -2.61). This is apparently driven by CHGPOT (T = -2.37) in that neither CHGAV nor CHGREC are significant at an alpha level of .10. The major contrast among merger types and nonmergers is between horizontal mergers and nonmergers (column 2). Here CHGAV (T = -1.81), CHGPOT (T = -2.43), and CHGTOT (T = -3.02) all show significant differences. Although there is some indication of a difference between vertical mergers and nonmergers (column 3), this is dominated by CHGPOT (T = -2.03) and the difference between

TABLE 5

T-STATISTICS

Column	1	2	3	4	5	6	7
Variable	Merging vs. Non-merging	Horiz vs. Non-merging	Vert vs. Non-merging	Conglom vs. Non-merging	Horiz vs. Vert	Horiz vs. Conglom	Vert vs. Conglom
CHGAV	-0.97*	-1.81	0.11	0.34	-1.37	-1.79	-0.15
	0.33**	0.07	0.91	0.74	0.18	0.09	0.88
CHGREC	-0.86	-0.27	-1.62	0.04	0.93	-0.15	-0.65
	0.39	0.78	0.12	0.97	0.36	0.88	0.53
CHGPOT	-2.37	-2.43	-2.03	-0.21	-0.35	-0.78	-0.62
	0.02	0.02	0.05	0.84	0.73	0.46	0.55
CHGTOT	-2.61	-3.02	-1.49	-0.63	-0.78	-1.33	-0.57
	0.01	0.01	0.15	0.55	0.44	0.22	0.58

* T-value
** significance level

total change in slack for vertical mergers and nonmergers is not as pronounced as between horizontal mergers and nonmergers. Columns 5 through 7 compare merger types; no indication of significant differences is apparent on the basis of type. The largest difference for CHGTOT occurs between horizontal and conglomerate mergers (T = -1.33) but this is still outside the .10 level of significance.

D. TESTS OF INDUSTRY AND SIZE EFFECTS

While no formal hypotheses were stated to expect slack change to differ depending on industry or firm size, an exploratory analysis to address industry and size effects was conducted. Analysis of variance (ANOVA) was used to test for the statistical significance of any differences in the variability of the slack measures on the basis of industry group and firm size. Table 6 lists the results. The merging and nonmerging firms were tested separately. The three subcategories of slack (CHGAV, CHGREC, and CHGPOT) and change in total slack (CHGTOT) served as the dependent variables. The null hypothesis tested by ANOVA is that the means of the dependent variables of the populations from which the sample firms were drawn are all equal. Rejecting this hypothesis would indicate that a significant difference in means exists between the sample groups.

For computed values of F less than or equal to 1.0, one could immediately conclude that the null hypothesis cannot be rejected, even without reference to statistical tables or

TABLE 6

SUMMARY OF ANOVA VALUES

Merging Firms

Indep Variable	Dep Var.	F Value	PR > F
Industry	CHGAV	0.55	0.74
	CHGREC	0.32	0.90
	CHGPOT	1.22	0.32
	CHGTOT	1.10	0.37
Size	CHGAV	0.47	0.63
	CHGREC	0.26	0.77
	CHGPOT	0.41	0.67
	CHGTOT	0.33	0.72

Nonmerging Firms:

Indep Variable	Dep. Var.	F Value	PR > F
Industry	CHGAV	0.69	0.60
	CHGREC	1.43	0.24
	CHGPOT	2.29	0.08
	CHGTOT	1.07	0.39
Size	CHGAV	1.67	0.20
	CHGREC	0.36	0.70
	CHGPOT	1.04	0.36
	CHGTOT	0.34	0.72

specific alpha levels. The expected value of any skewed F distribution is very near 1.0 and any value less than 1.0 is not significant. As with the t-statistic, alpha is again chosen as 0.10. With the exception of the dependent variable CHGPOT (F = 2.29) when comparing industry means within the nonmerging category, none of the F values are large enough to suggest that there are significant differences in the slack measures on the basis of industry or firm size. The low F values in nearly every instance

reinforce the t-statistic results which looked only at the type of merger and similarly showed no significant differences between the means of the horizontal, vertical, and conglomerate categories.

E. SUMMARY OF FINDINGS AND EMPIRICAL RESULTS

The mean changes in slack values shown in Table 4 generally support the hypothesis that organizational slack decreases as a result of merger activity. Comparing the total merging sample with the total nonmergers, the merging group shows smaller means for each of the four measures with a total slack reduction of nearly 100%. The largest difference occurs in CHGPOT where the merging firms show a 25.6% decrease while the nonmerging firms show a 47.1% increase.

The mean values classified by type of merger support the hypothesis that horizontal mergers should exhibit the greatest slack reduction, followed by vertical mergers, and to a lesser degree, conglomerates. While each type of merger shows reductions in total slack, horizontal mergers show the greatest reductions for each measure. The conglomerate mergers have smaller decreases for each of the four measures.

The t-statistics listed in Table 5 show varying levels of significance between the mean values discussed above. The most significant difference occurs with CHGTOT between merging and nonmerging firms. However, none of the t-

statistics for comparisons of merger type were significant. While one could argue that the rank order of the results support the hypothesis that slack change is determined by type of merger, the t-statistics do not suggest large enough differences in means to compensate for the large standard deviations of the individual measures.

1. Effect of Merger Types

The larger overall decrease in slack for the merged firms may be explained in terms of the efficiencies of the acquiring firms. Mergers should expect a reduction in slack because the acquiring firm was successful in building up slack reserves through efficient manufacturing operations and effective management prior to the merger. The excess slack reserves were then absorbed in consolidating operations as a result of the merger. The act of combining research and development, marketing, management, distribution, and production resulted in an abrupt reduction in slack levels.

Further differences in slack change on the basis of merger type might be explained using the transaction cost approach suggested by Williamson (1975). He argues that in many instances the possibility of reducing transaction costs drives organizations to restructure their operations. The effect of reduced transaction costs is most pronounced for vertical and conglomerate mergers where the target firm is typically a buyer, seller, or transporter of the acquiring

firm's products. The decreased transaction costs that result from both of these types of acquisitions serve to offset the slack reductions that occurred through the consolidation. Because of the reduced transaction costs, more resources become available to the merged firms and a smaller net decrease in slack is realized.

2. Effect of Industry Group and Firm Size

No significant difference was found in any of the slack measures on the basis of industry group or firm size. Odell (1972) suggested that different levels of slack are considered optimal depending on the industry, and these levels may vary from one group to another depending on economic and environmental factors unique to that industry. The percent change model used in this study would conceal any absolute slack distinctions between industries and in fact no differences are found.

Similarly, change in slack is not shown to be a function of firm size for this sample. Dimick and Murray (1978) and Wolf (1971) suggested that slack levels should vary proportionately with firm size, with larger firms realizing the most slack due to increased economies of scale. However, this does not necessarily imply a difference in percent change as measured here. Although absolute slack levels may well differ, they would not emerge through the Bourgeois and Singh model. In addition, the firms considered in this study are all "large" within their

respective industries, ranking among the top 25% in terms of net sales. Therefore, one would not expect to find a substantial difference in slack on the basis of the arbitrary size classifications and the model used here.

F. GENERAL CONCLUSIONS

The primary research question addressed in this thesis is whether or not organizational slack is reduced as a result of mergers. It was suggested that the consolidating effects of mergers would bring about a more efficient utilization of excess resources in the parties to the merger, thus leading to greater overall efficiencies and reduced slack. This study supports the hypothesis that mergers result in greater slack reductions than would otherwise occur. The results also support the hypothesis that horizontal mergers demonstrate the greatest decrease in slack. Vertical and conglomerate mergers also show reductions although to a lesser degree. However, only the mean differences between the total slack levels of the merging versus nonmerging firms and between the horizontal mergers versus nonmerging firms are statistically significant.

A possible explanation for the weak statistical results is that a distinct and generalizable relationship between mergers and organizational slack does not exist. Chapter II discussed several motives for merger including increased economies of scale; synergistic effects of combined

production, marketing, R&D, and distribution; faster growth; and risk reduction. The underlying factor behind all of these motives is the effect on profitability, and post-acquisition improvement in this area has not been verified. Studies looking at profitability, performance, and long-term survival potential as a result of merger activity show either no significant difference or conflicting results in comparing merging and nonmerging firms. As rather succinctly summarized in a 1969 FTC report on mergers and acquisitions, there may be just too many players (management, stockholders, the public, competitors, government) and too many internal and external factors (synergies, characteristics of acquired and acquiring firms, takeover artists, industry constraints) to allow for any inference regarding merger effects or contributions. In light of these previous studies, the failure to discover a more definitive relationship between slack and mergers is not surprising.

G. LIMITATIONS OF THE STUDY

These results must be interpreted in view of some inherent limitations of the study. First, the study relied on a multidimensional model of slack as the basis for the empirical analysis. The purpose of relying entirely on the Bourgeois and Singh model (1983) was to obtain quantitative measures of slack suitable for statistical analysis. The financial data used to calculate the individual slack

measures were readily available in the financial statements of the sample firms.

However, there are several shortcomings to this model that deserve consideration. Although the model is objective and straightforward, it provides a somewhat limited measure of slack. The primary dimension distinguishing the three categories of slack is the "ease of recovery," or the relative ease with which excess resources can be put to work by the firm. Although the eight individual measures cover a fairly wide range of operational indicators, issues such as managerial motivations and sentiments, economic or business constraints, and underlying strategic concerns are neglected. An additional qualitative measure of slack may be required to determine absolute slack levels in terms of organizational preferences. Surveys such as those used by Odell (1972) could elicit responses from executives regarding their perceptions of firm performance and utilization of slack resources. Thus, a "perceptual measure" could be obtained and used in conjunction with the financial measure.

Moses (1987) raises an objective to the model on the basis of the three-dimensional categorization. Although he considered the model conceptually appealing, Moses found that the three categories may not be distinct on the basis of ease of recovery. Instead, he recommends four dimensions as follows: 1) slack generated from increases in profits,

2) slack tied up as excess working capital, 3) slack absorbed as excess operating expenses, and 4) slack tied up in excess capital assets. Whatever subdivisions are considered, the overriding fact is that Bourgeois' model has yet to be empirically tested. Although Singh (1983) used this model as a basis for his study, he deviated from the original design by proposing a two-component model distinguishing between absorbed and unabsorbed slack. To date, the validity of the Bourgeois-Singh model as an accurate indicator of slack has not been confirmed.

A second limitation concerns sample selection. Analysis of merger effects required that the merging firms not engage in merger activity for several years prior to the 1977-1978 period. Although some 2,485 mergers occurred during that two-year time frame, the majority of them had to be excluded from the sample because of this stipulation. In addition, the arbitrary requirement that the acquired firm size be at least 10% of that of the acquiring firm eliminated another group from consideration. Both of these served to preclude a large pool of successful mergers where the acquiring firms typically practiced ongoing acquisition behavior. The time series analysis placed a similar constraint on the group of nonmerging control firms. The firms chosen as controls could not engage in any merger activity over the entire decade from 1973 to 1982; finding a sufficient number of firms within each industry group that were comparable in

size to the merging firms and at the same time fit this criterion, was a sizable task.

A third limitation concerns the classification of mergers by type. This study looked only at a general categorization based on horizontal, vertical, or conglomerate industry expansion. Marren (1985), Mueller (1980), and Steiner (1975) suggest that the acquisition methods; management and stockholder motives; and the takeover strategy, whether hostile, tender offer, friendly, or white knight; all can influence merger effects. Each author addresses studies which look at post-merger profitability and overall performance in light of these distinctions. However, more often than not, findings are not significantly different regardless of the sub-categories maintained.

A final limitation concerns the financial measures used to reflect slack. The measurement tools used to study profitability effects through merger in previous studies are similar to the slack components used in this thesis. Geroski (1984) relied exclusively on stock prices (similar to P/E ratio) to measure performance. Lev and Mandelker (1972) used long-term debt and various measures of liquidity (similar to L-T Debt/Net Worth, accounts receivable, inventory, and G&A) to measure profitability in acquiring firms. Mueller (1986) refers to several studies of merger profitability which use return on shareholders equity,

dividends, and net sales as indicators. In each case above, the merging firms did not perform any better than the average performance of their base industries. Mueller refers to one study by Hagarty (1970) in which firms experienced relative declines in efficiency and slowdowns in sales and profitability following their acquisitions. Further examples are widespread throughout the literature (Steiner, 1975; Geroski, 1984; Marren, 1985). Given that the measures for slack used in this study are similar to measures used to reflect profitability in previous studies, some confounding of profitability and slack effects may have occurred.

H. SUMMARY

This chapter presented the statistical methods used to analyze the data. In general, the calculated slack values cover a wide range but seem to indicate a relationship with merger activity. The total merging category showed a significant reduction in slack over the nonmerging control group. Firms were distinguished on the basis of size, type of merger, and industry category. The most significant reduction in slack levels occurred for horizontal mergers, although both vertical and conglomerate mergers showed reductions. The merging firms demonstrated larger slack reductions in each industry group than their nonmerging counterparts. Firm size did not show significant differences in slack.

Possible explanations for the inconclusive results were offered. The first concerned the limitations of the slack model itself and the lack of its verification as a valid measure of organizational slack. Second, the constraints imposed by the sample selection were discussed. The analysis required that the majority of mergers and control firms be excluded from the sample either because of multiple mergers or firm size. Finally, it was suggested that no generalizable causal relationship between mergers and slack exists. Previous studies have found little support for post-merger profitability or performance and this slack measure may just be another way to look at profitability.

VI. CONCLUSIONS

A. OVERVIEW

This chapter summarizes the study and presents the conclusions that can be drawn from the results. The chapter begins with a brief review of the theory of organizational slack and its hypothesized relationship with corporate mergers. Next, a summary of the findings are listed along with the ensuing conclusions. Finally, some areas for future research are discussed.

B. REVIEW OF THE THEORY

This study began with a brief history of U.S. corporate merger activity. The evolution of growth via merger was presented along with the trends and cycles that responded to major economic influences such as the Great Depression and World War II. Despite various setbacks, e.g., government legislation and public discord, the number of mergers has continually increased.

The reasons for engaging in corporate mergers are diverse and subject to various interpretations, depending on the parties who are either directly or indirectly affected. The advantages of growth through merger include economies of scale due to more efficient joint production, integrated facilities, research and development savings, and lower financing costs. Other reasons for merging are the tax

incentives, the reduced operating risk as a result of the portfolio effect, increased stock valuation, improved market potential, and more effective management.

Whether or not these motives justify the effects on society is continually under debate. Merger proponents argue that the resources saved through more efficient operations, increased research and development expenditures, and better employee conditions outweigh any disadvantages. Opponents claim that mergers serve only to restrict competition, lead to reciprocity, increase the economic power of a handful of corporate giants, and fulfill the aspirations and desires of power-hungry executives.

Organizational slack is one concept that is suggested as a means to investigate merger effects. Although several theories of slack have been proposed, theorists generally agree that slack constitutes a cushion of resources which enables an organization to adapt to internal or external pressures for change as well as to initiate changes in strategy. Slack consists of those material, managerial, and capital resources that are not currently being used to achieve organizational goals. Allowing a specified level of slack serves as a stabilizing mechanism for the firm to either absorb excess resources in times of prosperity or to provide emergency reserves during bad times.

A certain amount of slack is therefore beneficial to an organization, although the optimal amount typically varies

from industry to industry depending on numerous environmental factors as well as internal risk and production factors. Teece (1982) suggests an explicit relationship between slack and mergers. He claims that growth via merger may be efficiency-driven as a means to better utilize slack resources. Further, mergers and acquisitions are expected to minimize the slack in the parties to the merger by channeling the excess resources of the acquiring firm into more productive use while also providing more control over the acquired firm.

The purpose of this thesis was to investigate whether mergers do in fact affect the levels of organizational slack in the firms involved. It was hypothesized that the post-merger firm should demonstrate reduced levels of organizational slack because of the efficiencies and synergies that occur in the resultant operation. It was also hypothesized that the type of merger would affect the amount of slack in the resultant firm, with horizontal mergers eliciting the greatest slack reduction, followed by vertical mergers, and finally conglomerates. To test these hypotheses, the Bourgeois and Singh (1982) model of slack was used. This model measures three dimensions of slack based on ease of recoverability and combines them into one value to indicate the relative change in slack levels from one year to the next.

C. CONCLUSIONS AND IMPLICATIONS

The results of this thesis generally support the original hypotheses. First, the sample of merged firms demonstrated greater slack reductions than the nonmerging sample. Comparing the mergers that occurred in 1977 and 1978 with a nonmerging control group over the same period showed consistently larger reductions in total slack for the merged firms as well as reductions in the subcategories of available, recoverable, and potential slack. The t-test comparing merging and nonmerging firms showed a .01 level of significance for change in total slack. One explanation for these findings is the fact that mergers lead to more efficient utilization of excess resources and greater efficiencies in the merged firms.

Second, the study supports the hypothesis that the type of merger influences the amount of slack reduction. Horizontal mergers showed greater decreases in slack for each measure except for recoverable slack, with the largest reduction in total slack. Although vertical mergers resulted in reduced slack for each category, the total decrease was less than for horizontal mergers. Conglomerates showed the least reduction in slack for the merger types, with increases in both the recoverable and potential categories. The opportunities for using slack resources (i.e., complementary resources/need situations) are a "motivation" for horizontal mergers. Vertical and

conglomerate mergers driven by the desire to reduce transaction costs do not provide as great an opportunity to reduce slack.

Finally, the samples were categorized by industry type and pre-merger firm size to investigate whether slack was affected by these variables. Significant differences were not found in either case. Although differences in absolute slack levels between industry groups may exist, these would not be uncovered by the change measure used in this study. The inability to find differences in change in slack on the basis of firm size may be attributed to the arbitrary size classifications used here. The firms that constitute the study sample are all among the top 25% of U.S. firms; therefore, a subcategorization of these would not be expected to show significant differences.

The empirical results of this investigation were explained in terms of the increased efficiency of the merged firms. Slack reduction was assumed to be a positive benefit of more proficient, consolidated operations and maximized resource utilization. Merger advocates would use these outcomes to help support the argument that mergers and acquisitions are in fact advantageous forms of growth not only to the firms involved but also to the economy and society in general. However, merger opponents could counter that the slack was actually reduced below optimal levels to dangerously low points at which reserves are not readily

available to the firm if needed. A certain amount of slack is deemed necessary as a buffering mechanism which allows the organization to respond to fluctuations in demand, alternative marketing and production procedures, and increased research and development efforts. If slack is reduced to the point below which the merged firm can effectively adapt to business contingencies, then the firm's ability to survive may well be threatened. Operations may be unduly restricted, eliminating the flexibility required to compete adequately in the marketplace. Therefore, results which show reductions in slack levels could have negative implications. These reductions may actually jeopardize the solvency of the parties to the merger and expose them to undue risk and unnecessarily constrained operations. Thus, the issue of whether reduced slack levels are advantageous or speculative needs to be addressed further. This is one possible area for future research that is discussed next.

D. AREAS FOR FURTHER RESEARCH

This study elicits several other approaches to investigating merger effects. First, similar research could be conducted using additional measures of absolute slack. These could be devised along the lines of the Singh (1983) procedure which used financial measures to differentiate between absorbed and unabsorbed slack, or by the use of surveys as done by Gershenberg (1986) and Odell (1972).

Absolute slack measures would allow for the determination of normal industry levels of slack on the basis of industry-wide means or an average of the most successful firms within the industry. Post-merger slack could then be compared with industry norms and the results analyzed in terms of deviations from the norms.

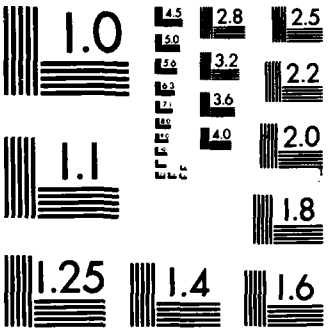
Second, it may be necessary to look at other categorizations of mergers. One limitation discussed in Chapter V concerned the breakdown of mergers into horizontal, vertical, and conglomerate. As suggested, a distinction based on acquisition motives or takeover strategy may be more appropriate for determining possible effects on slack. A study looking at such alternative classifications would entail a more thorough investigation of each individual merger to determine underlying motives or strategies that are not always easily identified.

Third, one may wish to look at post-merger performance over a longer time frame. Weston (1980) and Lev and Mandelker (1972) suggest that merger effects are not fully realized until five or more years after the merger. This study only looked at two and four years after the merger and may have omitted significant effects that showed up after this time frame. Such a lengthened study period creates a further difficulty in that firms who engaged in other mergers after the four year period would have to be eliminated from the sample.

Finally, a more comprehensive sample consisting of firms from all major industry groups may provide more definitive results. This thesis only looked at six industries. Although they were among the most active in terms of mergers, other industries were neglected. For example, the financial measures used to determine slack were not appropriate for the banking industry. Hence, this group was not included in the sample, even though it contained a greater number of mergers than any of the industries studied.

AD-A184 007 AN EMPIRICAL ANALYSIS OF THE INFLUENCE OF CORPORATE MERGERS ON ORGANIZATIONAL SLACK(U) NAVAL POSTGRADUATE SCHOOL MONTEREY CA D L HINGTGEN JUN 87 2/2

UNCLASSIFIED F/G 5/3 NL



MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A

APPENDIX

STATISTICAL RESULTS

TABLE 7

CHANGE IN SLACK--MERGING FIRMS

	Slack Measure			
Firm	CHGAV	CHGREC	CHGPOT	CHGTOT
Alberto-Culver	- 99.8	238.6	2.68	141.4
Carlisle Corp.	- 71.3	- 29.1	- 16.8	-117
Crutcher Resources	84.2	-130.1	- 63.9	-109.7
Daniel Industries	- 52.9	9.09	-138.2	-181.9
Dexter Corp.	-127.8	- 11.0	- 33.9	-172.8
Duplex Products	-156.1	10.9	169.7	24.5
Ex-Cell-O Corp.	- 76.5	- 40.9	- 39.1	-156.4
Esterline Corp.	- 38.1	9.45	5.22	- 23.5
Guardsman Chem.	- 79.1	- 50.4	- 23.2	-152.7
Health-Chem Corp.		44.2	59.4	
Jack Eckerd Corp.	- 40.3	- 26.5	- 12.6	- 79.5
Kellwood Co.	29.5	62.1	-119.0	- 27.3
Allis-Chalmers	- 55.3	- 5.0	- 39.2	- 99.5
Ames Dept. Stores	- 39.2	- 0.8	56.9	16.9
Asamera Oil	-391.1	- 2.34	-214.6	-607.9
Bowmar Instrument		-112.2	500.0	
Cabot Corp.	-143.1	-131.8	- 31.7	-306.5
Carter-Hawley Hale	- 21.3	- 35.9	- 15.1	- 72.4
Canadian Marconi	-103.7	- 58.2	53.2	-108.8
Chock Full'O Nuts	52.44	-113.9	142.5	81.0
Cubic Corp.	0.01	- 55.1	- 16.48	- 71.56
Dayco Corp.	45.7	13.6	45.2	104.4
Dayton-Hudson Corp.	- 52.7	- 6.1	- 22.3	- 81.1
Essex Chemical	-104.9	83.9	-253.5	-274.5
Federal Co.	31.4	27.1	24.1	82.7
Louis. Land & Explo	-133.2	149.0	- 49.2	- 33.4
Mark Controls	-322.3	111.5	- 13.5	-224.3
Nexus Industries	- 78.9	- 56.7	-254.8	-390.4
Great Lakes Chem.	-315.9	72.4	40.9	-202.6
Gulton Industries	-236.2	- 3.2	225.7	- 13.7
Harvey Hubbell	- 38.2	- 32.5	65.6	- 5.1
Heck's	-154.1	- 29.9	-181.9	-365.9
Johnson Controls	- 62.8	- 63.89	- 38.7	-165.4
Molson Companies	43.5	- 18.6	- 15.8	9.1
Pitney Bowes	- 36.9	- 26.8	- 6.9	- 70.7

TABLE 7 (CONTINUED)

Firm	CHGAV	CHGREC	CHGPOT	CHGTOT
Tracor Inc.	174.4	23.2	224.6	422.2
United Foods	9.8	8.5	-206.2	-198.7
Valmac Industries	35.8	-109.2	-241.3	-314.7
Viacom Int'l	12.2	34.3	66.8	45.2
Witco Chemical	- 0.7	- 16.1	60.4	43.7
Address-Multigraph	-101.8	153.6	0.89	14.4
Heath Tecna	245.6	30.5	-235.9	40.2
Rite Aid Corp.	-205.7	- 11.6	- 1.8	-218.9
Sabine Corp.	- 63.4	- 0.5	-210.8	-118.5
House of Vision	61.1	- 20.8		
Belscot Retailers	126.2	213.1	-193.8	145.5
Chessco Industries	1.66	52.1	-266.7	-218.9
Handschy Chemical	- 30.9	9.34	-219.8	-244.4
King's Dept. Store	-531.2	221.4	-126.6	-436.4
Rolm Corp.	0.88	- 96.0	135.1	15.8

TABLE 8

CHANGE IN SLACK--NONMERGING FIRMS

Firm	Slack Measure			
	CHGAV	CHGREC	CHGPOT	CHGTOT
Family Dollar	-169.9	18.9	70.5	- 11.5
Carson Pirie Scott	- 33.6	- 1.2	3.4	- 31.3
Assoc. Dry Goods	- 14.6	- 34.5	- 76.7	-125.7
Allied Stores Corp.	- 30.7	- 0.9	11.9	- 19.7
Mercantile Stores	10.1	- 9.9	-150.2	-150.1
J.C. Penney	0.2	125.6	-110.8	15.5
Zayre	-313.5	18.9	- 66.1	-360.7
C.G. Murphy	- 30.9	- 35.3	51.6	- 14.6
Long's Drug	-138.4			
Jamesway Corp.	40.3	- 16.9	49.9	73.3
Winkelman Stores	55.2	8.3	- 84.2	- 20.7
Wiebold	- 32.9	40.2	294.9	302.3
Allen Group	- 51.4	- 17.9	44.3	- 25.0
Badger Meter	42.9	0.1	- 0.4	42.7
Clark Equipment	39.7	- 10.6	281.8	310.9
Instron Corp.	- 30.9	9.34	-219.8	-241.1
Burndy Corp.	54.9	- 16.6	55.7	94.1
Clarostat Mfg.	- 6.09	- 54.8	141.9	80.8
Laberge Inc.	- 14.6	49.4	136.6	171.4
Thomas & Betts	33.7	11.7	- 72.1	- 26.7
Int'l Controls Corp.		- 9.3	248.5	
Harnischfeger Corp.	- 91.8	18.3	335.8	262.3
AMP Inc.	40.6	- 24.0	- 16.7	0.1
Big Three Ind.	-252.6	2.95	40.3	-209.4
Digicon	10.8	200.4	- 51.2	161.1
Connelly Container		0.1		
Int'l Flavors	207.1	- 19.8	11.8	215.1
ITT Rayonier	14.2	22.5	88.3	124.9
First Miss. Corp.	- 58.8	- 18.0	216.4	139.6
Greif Brothers	264.9	2.18	362.6	629.7
Amerada Hess	- 36.8	16.9	- 16.4	- 36.3
G.A. Hormel	- 44.1	79.3	-101.8	- 66.6
Big V Supermarkets	-245.5	59.7	92.4	- 93.3
Forest Oil	-341.0	- 17.6	179.5	-179.1
Westvaco Corp.	- 12.5	20.3	26.4	34.2
Shopwell, Inc.	5.81	- 0.9	-191.8	-186.7
Loctite Corp.	-231.4	29.3	47.9	-154.3
Tasty Baking Co.	- 4.6	24.9	- 21.9	- 1.5
Pueblo Int'l Inc.	105.5	57.4	- 45.4	117.4
NVF Co.		147.0	100.0	
Products Research	-112.1	44.7	160.9	93.5
Pacific Resources	- 87.2	- 4.6	- 48.8	-140.6
N.A. Royalties	0.6	19.8	117.3	137.7

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